

### **REMARKS**

Reconsideration of this application based on the foregoing Amendment and the following Remarks is respectfully requested.

#### **Allowable Subject Matter: Claims 6, 7, 9, 15, 16 and 18**

The Examiner objects to claims 6, 7, 9, 15, 16 and 18 as being dependent upon a rejected base claim but the claims would be allowable if rewritten into independent form including all of the limitations of the base claim and any intervening claims.

Prior to addressing the rejections over the prior art, the applicant has amended the specification at several locations to correct obvious errors. In particular, the paragraph on page 8, lines 25-26, has been amended so that FIG. 8 is described to be a perspective view of FIG. 7, and not of itself as FIG. 8.

The paragraph on page 13, lines 22-24, has been amended to refer to the antenna 23 and not antenna 40, since mark number 40 is the foldable portable telephone set, as shown in FIG. 2.

The paragraph on page 19, lines 5-12, has been amended to read: --The cancel current I2 cancels the high frequency current I1 distributed in the upper body 21a and the lower body 21b of the foldable portable terminal set 40--, since the cancel current I2 does not cancel itself but rather the high frequency current I1. This statement now corresponds to the disclosure on page 15, lines 22-24.

Therefore, no new matter has been added by any of the amendments to the specification.

Also, although it was not cited by the Examiner, the applicant calls to the Examiner's attention that claim 3 recites the limitation: "the antenna characteristic of said antenna matching

circuit when said portable radio terminal body is not folded may be equal to the antenna characteristic in the state wherein said portable radio terminal body is folded.”

To improve the grammatical form and to be consistent with analogous claim 12, the applicant has amended claim 3 to replace the phrase “may be equal” with --can be equal--. No new matter has been added.

**35 U.S.C. 102(b) Rejections: Claims 1-5, 8 and 10-12**

The Examiner has rejected claims 1-5, 8 and 10-12 under 35 U.S.C. 102(b) as being allegedly anticipated by Tamura (US 5,335,368 - filed May 29, 1992 - issued August 2, 1994).

Claim 1 recites in part the following:

a matching characteristic changeover circuit for changing over the characteristic of said antenna matching circuit so that the antenna characteristic when said portable radio terminal body is folded and the antenna characteristic when said portable radio terminal body is not folded are equal to each other.

The Examiner asserts that Tamura discloses all of the limitations of claim 1. In particular, the Examiner asserts that FIGS. 2 and 3 of Tamura disclose the foregoing limitation.

In response, the applicant calls to the Examiner’s attention that Tamura, column 3, line 63, to column 4, line 28, discloses the following with respect to operation of the portable radio apparatus of FIGS. 2 and 3:

Subsequently, description will be given of the operation to be achieved by the embodiment thus configured.

In a call waiting state, the upper and lower casings 10 and 40 are in the folded state such that the projection 13a of the switching element 13 is brought into contact with the lower casing 40, thereby setting the electric path of the matching circuit 12 to the state designated by the solid line in FIG. 3 or 4.

In this state, namely, when the apparatus is folded into the shape as shown in FIG. 5, the matching of the antenna 20 is established for the transmitting and receiving circuit 11.

In contrast therewith, when the casing 40 is unfolded as shown in FIG. 6, the projection 13a of the switching unit 13 is separated from the lower casing 40 and hence the electric circuit path of the matching circuit 12 is set to the state designated by the double-dot-and-dash line in FIG. 3 or 4. Namely, when the apparatus is in the unfolded state, the matching of the antenna 20 can be established for the transmitting and receiving circuit 11.

Moreover, in a case where the antenna 20 is pivotable and extendable as shown in FIG. 7 so that the antenna 20 is accommodated in the upper casing 10 as shown in FIG. 8 when the apparatus is folded, since the antenna is ordinarily contracted in the call waiting state, the matching of the antenna 20 is favorably established on assumption that the antenna 20 is accommodated in

the upper casing 10 when the projection 13a of the switching unit 13 is brought into contact with the lower casing 40.

As described above, in the portable radio apparatus according to the present invention, the matching state of the antenna is altered in association with the variation in the contour of the apparatus and hence can be kept retained both in the call waiting state and in the operating state.

Based on the foregoing disclosure, although Tamura appears to disclose a matching state of the antenna in the folded state and a matching state of the antenna in the unfolded state, Tamura does not disclose, teach or suggest a matching characteristic changeover circuit for changing over the characteristic of said antenna matching circuit so that the antenna characteristic when said portable radio terminal body is folded and the antenna characteristic when said portable radio terminal body is not folded are equal to each other.

Consequently, claims 1 and 3 patentably distinguish over Tamura.

With respect to claim 2, the Examiner asserts that projection 13a of Tamura, FIG. 2, is a folding detection circuit.

In response, the applicant maintains that in view of the arguments in favor of claim 1, claim 2 patentably distinguishes over Tamura.

Claim 4 recites in part the following limitations:

said matching characteristic changeover circuit is connected to said antenna and supplies current so as to cancel high frequency current distributed in said portable radio

terminal body in order to eliminate variation of the high frequency current between when said portable radio terminal body is folded and when said portable radio terminal body is not folded.

On page 4 of the Office Action, the Examiner asserts that FIGS. 1-4 and column 3, line 17, to column 4, line 35 of Tamura discloses the limitations of claim 4. However, on page 7 of the Office Action, the Examiner discusses claim 13.

The Examiner states with respect to claim 13 that Tamura does not disclose a current that cancels high frequency current between when a portable radio terminal body is not folded and when said portable radio terminal body is folded.

The applicant maintains that although claim 4 and claim 13 are not identical, in view of the Examiner's concession that Tamura does not disclose a current that cancels high frequency current between when a portable radio terminal body is not folded and when said portable radio terminal body is folded, claim 4 patentably distinguishes over Tamura.

With respect to claim 5, the Examiner cites Tamura, FIGS. 1-4, and column 3, line 17, to column 4, line 35.

In response, the applicant maintains that claim 5 stands together with claim 4.

With respect to claim 8, the Examiner cites Tamura, column 3, line 63, to column 4, line 4.

In response, the applicant maintains that in view of the arguments presented in favor of claims 4 and 5, claim 8 patentably distinguishes over Tamura.

With respect to both claim 10 and claim 11, the Examiner asserts that Tamura, FIGS. 7 and 8, discloses a helical antenna having an antenna feeding point at a base portion thereof.

In response, the applicant maintains that Tamura, FIGS. 7 and 8, discloses only a whip antenna and not a helical antenna. Consequently, claims 10 and 11 patentably distinguish over Tamura.

With respect to claim 12, the limitations of claim 12 are analogous to those of claim 3. Therefore, in view of the arguments presented in favor of claims 1 and 3, claim 12 patentably distinguishes over the prior art.

In view of the foregoing arguments, the applicant respectfully requests the Examiner to withdraw the rejections of claims 1-5, 8 and 10-12 over the prior art.

**35 U.S.C. 103(a) Rejections: Claims 13, 14, 17, 19 and 20**

The Examiner has rejected claims 13, 14, 17, 19 and 20 under 35 U.S.C. 103(a) allegedly as being unpatentable over Tamura in view of Eaton et al.

With respect to claim 13, the Examiner concedes that Tamura does not disclose a current that cancels high frequency current between when a portable radio terminal body is not folded and when said portable radio terminal body is folded. However, the Examiner then alleges that Eaton et al (WO 96/37967 - published November 28, 1996), page 9, lines 4-20, discloses the limitations of claim 13.

The applicant calls to the Examiner's attention that Eaton et al, on page 9, lines 4-20, discloses the following:

A PNP transistor 86 has its base connected to the collector of transistor 80, its emitter coupled to the battery supply, and its collector coupled through a resistor 88 to the coil 78. With this arrangement, closure of the cover switch 32 causes the transistor 80 to conduct, thereby lowering the voltage at its collector. In response, the transistor 80 (*PNP transistor 86???*) also conducts, thereby injecting current into the pin diode 76 via the resistor 88 and the coil 78. As a result, the pin diode (*76*) conducts and essentially couples the capacitor 74 to ground level and places the capacitor 74 in parallel with the fixed network (elements 68-72).

The adjustment to the impedance of the matching network 36 results in power transfer to/from the antenna 34 remaining substantially constant and maximized, irrespective of whether the selective call receiver is “on body” or “off body”.

The applicant also calls to the Examiner’s attention that component 62 is a control circuit. Based on the foregoing, Eaton et al disclose that the pin diode 76 conducts current and essentially couples the capacitor 74 to ground level and places the capacitor 74 in parallel with the fixed network elements 68-72. Therefore, the impedance matching network 36 allows power to be transferred to/from the antenna 34 so as to be substantially constant and maximized,

irrespective of whether the selective call receiver is “on body” or “off body”.

On page 1, lines 18-27, Eaton et al teach that pagers are typically intended to be carried “on body”, as by clipping it on the user’s belt or carrying it in a pocket. Because of the well known body effect which influences the tuning of the pager’s antenna, the antenna is designed and tuned to compliment the body effect. The net effect is a pager with optimized power transfer between the pager’s antenna and its receiver circuitry. When the pager is “off body”, i.e., not in close proximity to the user’s body, the body effect is lost and the power transfer between the pager’s antenna and its receiver circuits is severely reduced.

Therefore, the impedance matching network 36 and control circuit 62 of Eaton et al pertain to a pager which is “on body” or “off body”, and not to the present invention of claims 4 and 13 of a matching characteristic changeover circuit connected to said antenna and supplies current so as to cancel high frequency current distributed in said portable radio terminal body in order to eliminate variation of the high frequency current between when said portable radio terminal body is folded and when said portable radio terminal body is not folded.

Therefore, there is no cancellation of high frequency current in the disclosure of Eaton et al., but instead a transfer of power to/from the antenna so as to be substantially constant and maximized. As a result, neither Tamura nor Eaton et al disclose, teach or suggest the limitations of claim 13. Consequently, claim 13 patentably distinguishes over the prior art.



With respect to claim 14, the applicant maintains that Eaton et al does not overcome the deficiencies of Tamura with respect to claim 13. (Claim 14 is analogous to claim 5).

Consequently, claim 14 patentably distinguishes over the prior art.

With respect to claim 17, the applicant maintains that Eaton et al does not overcome the deficiencies of Tamura with respect to claim 14. (Claim 17 is analogous to claim 8).

Consequently, claim 17 patentably distinguishes over the prior art.

Claims 19 and 20 are analogous to claims 10 and 11. As with claims 10 and 11, the applicant maintains that Tamura, FIGS. 7 and 8, discloses only a whip antenna and not a helical antenna. Consequently, claims 19 and 20 patentably distinguish over the prior art.

In view of the foregoing arguments, the applicant respectfully requests the Examiner to withdraw the rejections of claims 13, 14, 17, 19 and 20 over the prior art.

The foregoing Amendment and Remarks establish the patentability of all of the claims in the application, i.e., claims 1-20. No new matter has been added. Wherefore, early and favorable reconsideration and issuance of a Notice of Allowance are respectfully requested.

Respectfully submitted,



Anthony N. Fresco

Registration No. 45,784

Scully, Scott, Murphy & Presser  
400 Garden City Plaza  
Garden City, New York 11530  
Telephone: (516) 742-4343  
Facsimile: (516) 742-4366  
ANF:ng